ABSTRACT

An image is divided into subbands by wavelet transform using the Haar function as the base, and the lowest-frequency LL subband is entirely encoded. LH, HL, and HH subband coefficients which belong to the wavelet decomposition level of each hierarchy are then encoded such that coefficients at the same spatial position are encoded at once. The decoding side first decompresses the lowest-frequency LL subband, and then decodes sets of the LH, HL, and HH coefficients at the same spatial position in the subband of each wavelet decomposition level one by one. The decoding side immediately performs inverse wavelet transform by using the coefficient values, thereby obtaining the LL coefficient value of the next wavelet decomposition level. This makes it possible to sufficiently increase the processing speed even when the wavelet encoding/decoding is performed using a sequential CPU.